

REMARKS

Claims 1-9, 11-15, 18, 19, 22, 24, and 31-34, 36-49, 51-63, 65-82 are currently pending. Claims 1-4 are amended to recite in part that the protein concentrate comprises whey protein. Claims 2 and 4 are amended herein to recite that inactivation is done by heating the cheese mass to at least 75°C for between 20 seconds and 120 minutes. Claims 2 and 4 are also amended to clarify “at least one strain of flavor producing organism”. Support for the amendments can be found throughout the specification as originally filed, for example at paragraphs [0061], [0083], [0084], [0126], and [0128] of the specification as published. No new matter is added.

Applicants thank the Examiner and her Supervisor for taking the time to discuss the application.

Rejections under 35 U.S.C. § 112

The Examiner rejected Claims 2 and 4 under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. The Examiner asserted that “inactivating the flavor producing organisms” was not supported by the specification because the step was preceded by the phrase “if required”. Applicants disagree. The use of “if required” along with conditions for inactivation in the specification clearly support inactivating as used in Claims 2 and 4. Applicants respectfully request withdrawal of this rejection.

The Examiner also rejected Claims 2 and 4 under 35 U.S.C. § 112, second paragraph as indefinite. The Examiner asserted that there was no recitation in the claims that the organisms are in active form. Applicants submit that the heating and mixing step is performed without holding to facilitate fermentation. A person of skill in the art would appreciate that the flavor concentrate could contain active microorganisms and enzymes. Applicants submit that Claims 2 and 4 are sufficiently definite to a person of skill in the art. Applicants respectfully request withdrawal of this rejection.

The Examiner also rejected Claims 2 and 4 for antecedent basis reasons. Claims 2 and 4 are also amended to clarify “at least one strain of flavor producing organism”. Applicants respectfully request withdrawal of the antecedent basis rejections.

Johnston alone or in combination with various secondary references fails to make Claims 1-9, 11-15, 18, 19, 22, 24, and 31-34, 36-49, 51-63, 65-82 obvious

Claims 1-9, 11-15, 18, 19, 22, 24, and 31-34, 36-49, 51-63, 65-82 stand rejected under 35 U.S.C. § 103(a) as unpatentable in view of WO 03/069982 to Johnston (hereinafter “Johnston”) alone or in combination with one or more of GB 1,057 170 to Lashkari (hereinafter “Lashkari”), Bernard et al. (hereinafter “Bernard”), Nelson (Journal of Agricultural and Food Chemistry), American Cheese Society Publication, and U.S. Patent No. 4,655,127 to Skovhauge.

Independent Claims 1-4

Claim 1 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston. Claim 2 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston, Lashkari, Bernard and Nelson. Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston, Lashkari, and Bernard. Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston, Lashkari, and Nelson.

Claims 1-4 are independent claims. Claims 1-4 are amended to recite in part that the protein concentrate comprises whey protein. Johnston fails to disclose a protein concentrate comprising whey protein. Lashkari, Bernard, and Nelson fail to make up for this deficiency. The use of a protein concentrate comprising whey protein is more than an obvious variation of Johnston, Lashkari, Bernard, and Nelson. Johnston, Lashkari, Bernard, and Nelson fail to provide any reason to use a protein concentrate comprising whey protein or any expected benefit for using a protein concentrate with whey protein.

In addition, the use of whey protein in the protein concentrate resulted in unexpected improvements such as improved flavor. *See* Declaration of Stephen Dybing at paragraph [0017] and paragraphs 4.4 and 5 of Exhibit 4. A person of skill in the art would not have expected the use of a protein concentrate comprising whey protein to improve the flavor because intact whey proteins are too large to affect the active sites on human taste buds. *Id.* Improvements to the flavor from the use of a protein concentrate comprising whey protein are not disclosed in Johnston, nor would a person of skill in the art have expected whey protein to improve the flavor. *Id.* Thus, a person of skill in the art would have no reason to use a protein concentrate comprising whey protein in the processes in Johnston.

Johnston, Lashkari, Bernard, and Nelson fail to disclose or render obvious the features of Claims 1-4 or their dependent claims. Accordingly, Applicants respectfully request withdrawal of the rejection for at least this reason.

Independent Claims 2 and 4

Claim 2 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston, Lashkari, Bernard and Nelson. Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable in view of Johnston, Lashkari, and Nelson. Claims 2 and 4 are amended herein to recite in part inactivating the flavour producing organisms by heating the cheese mass to at least 75°C for between 20 seconds and 120 minutes. Johnston, Bernard, Lashkari, and Nelson fail to disclose the recited heating conditions.

Johnston fails to disclose inactivation as recited in Claims 2 and 4 and their dependents. The Examples in Johnston disclose heating to temperatures between 62°C and 72°C for 2-4 minutes and thus fall outside of the recited ranges. A person of skill in the art would appreciate that the conditions in Johnston are sterilization conditions. Additionally, a person of skill in the art would not expect the conditions used in the examples in Johnston to inactivate the enzymes present. Declaration of Stephen Dybing at paragraph 16. Johnston discloses heating conditions sufficient for sterilization and there is no reason in Johnston to heat the mixture to conditions that could do more than sterilize. Nelson and the other cited references fail to make up for this deficiency. Nelson discloses heating to a temperature of 130°C for 4 seconds (page 569), which is outside the recited range. A person of skill in the art would appreciate that these conditions may be sufficient for sterilization but will not inactivate the mold enzymes. Declaration of Stephen Dybing at paragraph 9. Thus, Nelson fails to disclose the inactivation conditions as recited in Claims 2 and 4 and their dependents. Lashkari discloses sterilization (page 2, line 4) and thus also fails to disclose the inactivation conditions as claimed. There is also no reason to combine Nelson and Johnston as Johnston already uses sterilization conditions. Bernard also fails to disclose inactivation or make up for the deficiencies of Johnston, Nelson, and Lashkari that are noted above.

As discussed above, Johnston fails to disclose inactivating flavor producing organisms as recited in Claims 2 and 4. Modifying Johnston in view of the secondary references to

inactivating the flavour producing organisms by heating the cheese mass to at least 75°C for between 20 seconds and 120 minutes is more than an obvious variation. Further, this more than an obvious variation because the flavor concentrates disclosed in Johnston do not have enzymes present. Thus there would be no need to perform an inactivation step to inactivate the enzymes by heating the mixtures at higher temperatures and for longer times than required for the sterilization used in Johnston. Thus, Johnston fails to provide any reason for inactivation as recited in Claims 2 and 4.

Applicants also submit that there is no reason to further modify Johnston as suggested in the Office Action to use the flavor concentrate of Lashkari. As noted in the previous response, Johnston discloses that flavor ingredients may comprise various fermentation and/or enzyme derived products or mixtures thereof (page 11, lines 8-9). Fermentation and/or enzyme derived products are mixtures that are different from fermentates because fermentates can have active bacteria and enzymes present. The flavoring products used in Johnston are derived from fermentation or enzyme products but they do not contain active enzymes or bacteria. The flavor concentrates of Lashkari contain active microorganisms. Johnston discloses that their samples were held for 1 month at 5°C before organoleptic evaluation [Example 1] which is a typical maturation period for the enzymes present in traditional cheese to bring about ripening i.e. flavor production. A person of skill in the art would recognize that if the heating conditions fail to inactivate any flavor producing enzymes, particularly lipases and proteases, then these enzymes will continue to act on a food substance long after the substance has been sterilized. Declaration of Stephen Dybing at paragraph 13. A person of skill in the art would further appreciate that any continued enzymatic activity would produce unacceptable variations in flavor and flavor defects. *Id.* Thus, a person of skill in the art would not combine the references as suggested because they would expect flavors to continue to develop, which would change the flavor unfavorably. Johnston is concerned with a controlled flavoring process and thus would not desire the continued flavor development that would occur in the proposed combination. Such a modification of Johnston would change the principle of operation of Johnston because rather than adding a known flavor, a continuous flavor development would occur. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the

claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Applicants submit that there is no reason to make the combinations with Johnston suggested in the Office Action and it would change the principle of operation of Johnston with respect to the flavor. Accordingly, Applicants respectfully request withdrawal of the rejection for at least this reason.

Further, this is also more than an obvious difference because the skilled artisan would not add the flavoring component of Lashkari to the process of Johnston because it would be expected to cause additional variability and possible processing problems. For example, the instant specification discloses that “A further known method is to standardize the flavor of such cheese by ripening the cheese to the optimal extent and then heat treating the cheese to arrest all microbiological processes. However, this process can cause undesirable flavor and unusual textural changes in the cheese. As a result, heat treated cheeses are often marked down in price” [paragraph 0008]; and also that: “Quality defects that take months to become evident represent expensive failures that the consumer ultimately carries” [paragraph 0011].

Applicants respectfully request withdrawal of the rejection of Claims 2 and 4 and their dependents because the combinations fails to disclose the features of Claims 2 and 4 and there is no reason to combine and modify the cited references to achieve the recited features.

Claims 5-9, 11-15, 18, 19, 22, 24, and 31-34, 36-49, 51-63, and 65-82 depend from Claims 1-4 and recite all the elements of Claims 1-4 in addition to reciting further distinguishing features. Thus, Applicants respectfully request withdrawal of the rejection of these claims as well, for at least the reasons set forth above.

Further, Applicants submit that the combinations also fail to disclose the features of Claims 7, 33, 47, and 61. Claims 7, 33, 47, and 61 depend indirectly from Claims 1, 2, 3, and 4, respectively and further recite wherein following the freezing step, the cheese is thawed and further ripening occurs. Applicants submit that the cited references fail to disclose or make obvious such features. Accordingly, Applicants respectfully request withdrawal of the rejections of Claims 7, 33, 47, and 61 for this reason as well.

No Disclaimers or Disavowals

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Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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